



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/064,644	08/02/2002	Chi-Hsing Hsu	9223-US-PA	2131

31561 7590 07/30/2003

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE  
7 FLOOR-1, NO. 100  
ROOSEVELT ROAD, SECTION 2  
TAIPEI, 100  
TAIWAN

EXAMINER

WILLIAMS, ALEXANDER O

ART UNIT PAPER NUMBER

2826

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/064,644

Applicant(s)

HSU, CHI-HSING

Examiner

Alexander O Williams

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 16-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 16-27 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2826

Serial Number: 10/064644 Attorney's Docket #: 9223-US-PA  
Filing Date: 8/2/2002; claimed foreign priority to 6/5/2002

Applicant: Hsu

Examiner: Alexander Williams

Applicant's Amendment/election of species (claims 16 to 22) in Paper # 3, filed 4/15/03, has been acknowledged.

Claims 1-15 have been canceled.

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2826

Claims 16 to 27 are rejected under 35 U.S.C. § 102(e) as being anticipated by Ohno (U.S. Patent Application Publication # 2002/0113319 A1).

16. Ohno (figures 1 to 19) specifically figure 6 show a flip chip die **50B** for joining with a flip chip package substrate, wherein the flip chip die having an active surface thereon (top of 50b), comprising: a group of core die pads (**11,12,301 and middle pads**) on the active surface; and a plurality of die pad rows (**outer portion of pads**) on the active surface sequentially laid outside the group of core die pads such that one end of each of the die pad rows is adjacent to the group of core die pads and each die pad row includes a plurality of die pads therein, wherein the die pad rows are selected from signal die pad rows, power die pad rows and ground die pad rows.

17. The flip chip die of claim 16, Ohno's group of core die pads includes a plurality of core power die pads and core ground die pads.

18. The flip chip die of claim 16, Ohno's at least one signal die pad row is positioned between the power die pad row and the ground die pad row.

19. Ohno (figures 1 to 19) specifically figure 6 show a flip chip die **50B** for joining with a flip-chip package substrate, wherein the die having an active surface thereon, comprising: a group of core die pads (**11,12,301 and middle pads**) on the active surface; a plurality of inner die pads rows (**outer portion of pads**) on the active surface sequentially laid outside the group of core die pads and each inner die pad row is adjacent to the group of core die pads therein wherein inner die pad rows are selected from signal die pad rows, power die pad rows and ground die pad rows; and a plurality of outer die pad rows on the active surface laid outside a second end of each of the inner die pad rows and vertical to the inner die pad rows, wherein each outer die pad row has a plurality of outer die pads therein.

20. The flip chip die claim 19, Ohno's group of core die pads includes a plurality of core power pads and core ground die pads.

21. The flip chip die of claim 19, Ohno's at least one signal die pad row is positioned between the power die pad row and the ground die pad row in the inner die pad row in the inner die pads rows.

22. The flip chip die of claim 19, Ohno's outer die pads are signal die pads.

Art Unit: 2826

23. The flip chip die of claim 16, Ohno's has each die pad has a bump thereon.

24. The flip chip die of claim 16, Ohno's flip-chip package substrate is a multi-layer substrate and has a plurality bump pads at a surface of the package substrate corresponding to the die pads of the flip chip die respectively.

25. The flip chip die of claim 19, Ohno's has each die pad has a bump thereon.

26. The flip chip die of claim 19, wherein the flip-chip package substrate is a multi-layer substrate and has a plurality bump pads at a surface of the package substrate corresponding to the die pads of the flip chip die respectively.

27. The flip chip die of claim 19, Ohno's outer die pad rows includes a first outer die pad row, a second outer die pad row and a third die bump pad row sequentially from inside to outside, wherein the shortest distance between the neighboring outer die pads of the second outer die pad row is wide enough to permit the passage of at least one conductive trace at a surface of the package substrate, the shortest distance between the outer die pad of the second outer die pad row and the outer die pad of the third outer die pad row is wide enough to permit the passage of at least one conductive trace at a surface of the package substrate, and the shortest distance between the neighboring outer die pads of the third outer die pad row is wide enough to permit the passage of at least two conductive traces at the surface of a package substrate.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/778,784,786,692,693,698,734,737,738	7/22/03
Other Documentation: foreign patents and literature in 257/778,784,786,692,693,698,734,737,738	7/22/03
Electronic data base(s): U.S. Patents EAST	7/22/03

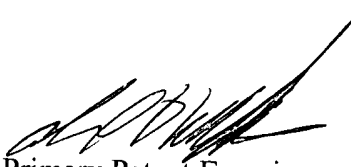
Art Unit: 2826

***Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to Technology Center 2800 via the Technology Center 2800 Fax center located in Crystal Plaza 4-5B15. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center 2800 Fax Center number is (703) 308-7722 or 24. Only Papers related to Technology Center 2800 APPLICATIONS SHOULD BE FAXED to the GROUP 2800 FAX CENTER.***

Any inquiry concerning this communication or any earlier communication from the examiner should be directed to ***Examiner Alexander Williams*** whose telephone number is ***(703) 308-4863***.

Any inquiry of a general nature or relating to the status of this application should be directed to the ***Technology Center 2800 receptionist*** whose telephone number is ***(703) 308-0956***.

7/23/03

  
Primary Patent Examiner  
Alexander O. Williams